DOCUMENT RESUME

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ABSTRACT

This self-paced student training module on Introduction to the Electrical Trade is part of the course, Electrical Trade, which was developed for Preapprenticeship Phase 1 Training. (A companion instructor's guide is available separately as CE 032 873.) The course is designed to provide students with an orientation to the trade and an opportunity to explore it. The purpose of the module is to provide an introduction to the electrical trade, including history, trends, working conditions, hiring practices, employment opportunities, and wage scale of the electrician trade. The module may contain some or all of the following: a cover sheet listing module title, goal, and performance indicator; study guide/checklist with directions for module completion; introduction; information sheet providing information and graphics covering the module topic(s); supplementary references; self-assessment; self-assessment answers; post assessment; and post-assessment answers. (YLB)

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INDIVIDUALIZED LEARNING SYSTEMS

# PRE-APPRENTICESHIP
# PHASE 1 TRAINING

INTRODUCTION TO THE ELECTRICAL TRADE

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## Goal:

The student will be able to identify and briefly describe the history, trends, working conditions, hiring practices and wage scale of the electrician trade.

## Performance Indicators:

The student will demonstrate knowledge of the material by successfully completing a Self Assessment and a Post Assessment exam.

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# Study Guide

To successfully complete this module, complete the following tasks in the order listed. Check each one off as you complete it.

1. ____ Read the Goal and Performance Indicators on the cover of this module. This will inform you of what you are expected to gain from completing this module and how you will demonstrate that knowledge.

2. ____ Study the Information section of this module to acquire the knowledge necessary to complete the Self and Post Assessment exams.

3. ____ Complete the Self Assessment exam and compare your answers with those on the Self Assessment Answer Sheet on the page immediately following the exam. Re-study or ask your instructor for help on any questions you have trouble with. The Self Assessment exam will help you determine how well you are likely to do on the Post Assessment.

4. ____ Complete the Post Assessment exam and turn your answers in to your instructor.

# Information

## HISTORY

Up until the first decade of the 20th century, the regions in which electric energy was distributed were limited to small areas. The total amount of power available was fairly insignificant.

In 1844, the first telegraph wires were established between Washington and Baltimore. Electricity was regarded, after that time, as being of commercial importance. In 1848 the first telegraph station was built and by 1866 the transatlantic cable was laid.

Edison's invention of the incandescent lamp in 1879 increased public awareness of the use of electricity in their everyday lives. The Pearl Street Generating Station in New York was established in 1882 and the electric power and light industry got under way. The number of electrical workers increased as the public demand for electricity grew.

## TRENDS

Job opportunities will increase about the same as the average for most occupations in the 1980's. As population and economic growth occurs, more electricians will be needed to install electrical fixtures and wiring in new and renovated homes and offices. Openings will occur as electricians leave the trade. Opportunities will be most favorable for those with apprenticeship training. Construction activity can greatly influence the demand for electricians each year, but they may be transferred to other types of electrical work.

## WORKING CONDITIONS

An electrician's work does not require a lot of strength, but they often have to stand for long periods of time or work in cramped quarters. Most of the common

work is indoors. Safety practices have reduced the injury rate among workers in the trade.

In 1978, approximately 270,000 construction electricians worked for electrical contractors. Many were self-employed contractors, primarily located in industrialized, urban areas.

## HIRING PRACTICES

Employers want applicants who are in good health, can detect color variances, are agile, and who possess a great deal of manual dexterity. Apprenticeship positions must be filled by applicants that are at least 18 years old with a high school diploma and one year of algebra.

A license is necessary to obtain employment in some cities. The licensing exam requires a thorough knowledge of the craft and of local and State building codes.

A greater percentage of electricians learn their trade through apprenticeship training than other construction trade workers. The four-year programs have comprehensive on-the-job training and a minimum of 144 hours of classroom training each year.

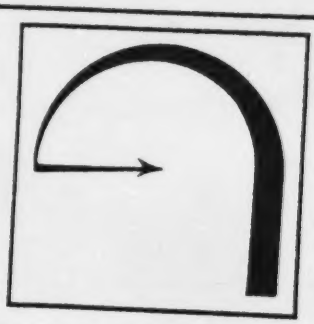
Helpers who are not apprentices can learn informally by piecing together electrical components or learning about electrical devices. They eventually broaden their knowledge and are taught good safety practices.

## WAGE SCALE

According to a survey of the largest metropolitan areas, electricians averaged $11.25 an hour in 1978. Seasonal changes do not affect an electrican's annual wage as much as they do other construction workers. New apprentices are paid the usual beginning salary of 50% of a journeyman worker's rate and they earn more every six months.

A large proportion of construction electricians belong to the International Brotherhood of Electrical Workers.

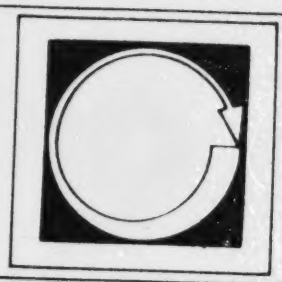
# Supplementary References



History and Structure of the IBEW Early Years.

Occupational Outlook Handbook, U.S. Department of Labor, Bureau of Labor Statistics March 1980, pp. 219 and 220

# Self Assessment



Complete each statement by writing the appropriate word or phrase in the blank provided.

1. _____ was available to very small areas early in the 1900's.

2. _____ incandescent lamp was invented in 1879.

3. Electricans' jobs in 1980 are expected to be similar to those of other _____.

4. Most apprenticeship programs accept applicants with a _____ education.

5. Helpers (who are not apprentices) can learn on the job by picking up _____ knowledge as they work.

6. Seasonal conditions have little effect on electricans _____ wages.

7. Safety practices help keep accidents at a _____.

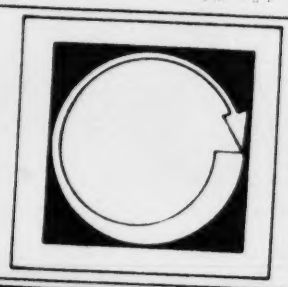
8. As in most apprenticeship programs, electrican apprentices earn about _____ as much as skilled electricans.

9. It is important for _____ to be able to discern colors.

# Self Assessment Answers

1. electricity
2. Edison's
3. occupations
4. high school
5. practical
6. annual
7. minimum
8. half
9. electricans

# Post Assessment



Select the word or phrase which correctly answers the question or completes the statement and write its corresponding letter in the blank space provided.

1. ____ The first telegraph wires were strung between ____ and _____ in 1844.
   a. Baltimore
   b. New York
   c. Washington
   c. Delaware

2. ____ The Transatlantic cable was laid in _____.
   a. 1900
   b. 1848
   c. 1888
   d. 1950

3. ____ Edison's invention of the incandescent lamp helped demonstrate the usefullness of _____.
   a. light bulbs
   b. electricity
   c. fans
   d. telegraph wires

4. ____ Electricians must be able to tolerate working in _____ areas.
   a. roomy
   b. smoky
   c. dark
   d. cramped

5. ____ _____ electrical work is done indoors.
   a. little
   b. most
   c. some
   d. all

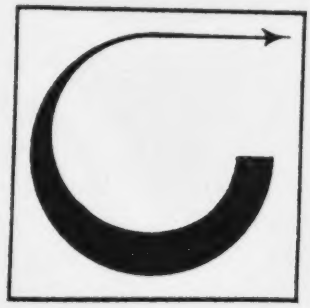
6. ____ Electrican apprentices must be how many years old?
   a. 16
   b. 17
   c. 18
   d. 19

7. ____ Some cities require a _____ to practice as an electrician.
   a. permit
   b. map
   c. license
   d. pardon

8. ____ Electricans, more than other workers, learn their trade through _____.
   a. high school
   b. college
   c. apprenticeship

9. ____ Electricians earned hourly wages of _____ in 1978.
   a. $11.25
   b. $12.25
   c. $10.50

# Instructor Post Assessment Answers



1. a, c
2. b
3. b
4. d
5. b
6. c
7. c
8. c
9. a